

REMARKS/ARGUMENTS

The present amendment is submitted in response to the Office Action dated May 21, 2007, which set a three-month period for response. Filed herewith is a Request for a One-month Extension of Time, making this amendment due by September 21, 2007.

Claims 6-10 are pending in the application.

In the Office Action, the abstract was objected to for not being presented on a separate sheet. The claims were objected to for including reference characters that are not enclosed within parentheses. The position of the reference to the priority document was objected to. Claims 6-10 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite. Claims 6-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,718,302 to Hasebe et al in view of U.S. Patent No. 5,533,943 to Ichioka et al.

In the present amendment, claim 6 has been amended to address the formal rejections under Section 112, second paragraph.

The objection to claim 7 is not understood. Claim 7 defines an alternative to the situation recited in claim 8, where the spacer disk 27 is disposed between the sleeve 26 and the sun pinion 19.

Also in this amendment, the specification likewise was amended to address the objections.

Turning next to the substantive rejection of the claims, the Applicant respectfully disagrees that the cited reference combination renders obvious the subject matter of the pending claims.

The Examiner correctly states on page 6 of the Office Action that Hasebe does not explicitly disclose that the sun pinions 31 and the planet gears 33 are embodied as helical gears having a force component that acts in the direction of the motor shaft bearings 18. The Examiner then goes on to argue that Ichioka teaches a planetary gear device in which the sun gear 14 and the planet gears 20 are embodied as helical gears.

With regard to the above features, the cited references fail to disclose an important aspect of the present invention, specifically, a helical gear with a force component acting in the direction of the motor shaft bearings, for the sun pinion as well as the gears.

With regard to whether Ichioka discloses a helical gear with a planetary gear, as shown in Figs. 3, and 4, in particular Fig. 4, in connection with the specification in column 7, Ichioka describes that the helical gears are arranged on the individual gear wheels of the gear mechanism such that the axial components of the respective forces F_{SS} and F_{RS} are ***oriented opposite to one another***, because a force system contained therein is made available.

In contrast, the present invention provides that the sun pinion as well as the gear wheels meshing therewith have a helical gear with respective force components acting in the direction of the motor shaft bearings, so that the respective axial force components of the sun pinion and gears are ***oriented in the same direction***. This important distinction is qualified, in that the axial force components that occur are directed against the motor shaft bearing intentionally. Ichioka does not provide any disclose of this feature. In that reference, the helical gears are oriented to the gears with a completely different object in mind and in a completely different manner.

In addition, the Applicant disagrees with the comparison by the Examiner on page 5 of the office Action between the features described in Hasebe and the structure of the drive shaft of the present invention. First, the Examiner has compared features of Figs. 2 and 3 of Hasebe in his analysis. However, Figs. 2 and 3 show different embodiments, so that the features cannot be "mixed".

The Applicant further directs the Examiner's attention to the embodiment in Hasebe described in column 8, line 65 to column 9, line 36 with regard to the feature of the present invention of the formation of the motor shaft bearing as a radial and axial-force receiving bearing as well as the intended production of axial forces on the sun pinion and the gears. Hasebe describes that the axial forces depending on the working direction of the gear (forward drive or non-forward drive) – are absorbed by the outer bearings 15 and 16. The additional center bearing 18 is not mentioned at all in this connection. No connection from the sun pinion to the outer bearings 15 and 16 via a sleeve exists, so that the corresponding effect of force cannot be realized as in the present invention.

Claim 8 of the present invention recites that a spacer disk 14 is disposed between the sleeve and the sun pinion. As disclosed in column 8, lines 19 – 26 of Hasebe, a "needle type thrust bearing" is arranged between the sun pinion 31 and the carrier 34, so that Hasebe provides no suggestion of disposing element 14 between the sleeve 25 and the sun pinion 31.

The Examiner further compares the securing means 28 for securing the sun pinion against the sleeve with the elements 40, 41 "for fixing the sun pinion against the sleeve". The Applicant also disagrees with this analysis. As provided in column 8, line 50 of Hasebe, the element 40 (differential unit case) is connected with the

carrier 34, which in turn is mounted against the bearing 14. Thus, element 40 (also including element 41) cannot assume any axial securing function for the sun gear 31, so that elements 40, 41 cannot be compared with the securing element 28 of the present invention.

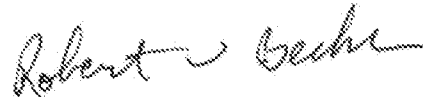
In addition, the sleeve 25 in Hasebe has a different function, specifically, also driving the element 27, and also represents a type of coupling or extension of the drive shaft 23 (see column 7, lines 62 through 65 of Hasebe). On this basis, a splined connection exists between the drive shaft 23, the sleeve 25, and the sun pinion 31, which are connected with an axial overlapping in series. Based on the fixed connection between the drive shaft, sleeve, and sun pinion, Hasebe also fails to disclose that the sleeve 26 is supported against the motor shaft bearing and the sun pinion as in the present invention, because with the present invention, no fixed connection is provided between the sleeve, the sun pinion and the motor shaft.

Based on the marked distinctions between the structures of the drive shafts of the present invention and Hasebe, one of skill in the art would not be motivated to refer to Hasebe or draw from his teachings, and also would not be motivated to combine the disclosures of Hasebe and Ichioka, because it simply would make no sense to combine the helical bear of Ichioka with the structure of the gear of Hasebe. As noted above, Ichioka shows that the axial forces are oriented opposite to one another, and an integration of this type of force effect in the structure of the gears in Hasebe would not be recognized by one of skill in the art as an advantageous modification, nor would such a combination comprise all of the features of the present invention.

Again, the Applicant emphasizes that with the present invention, it is intended that force components are produced that act axially on the sun pinion and gears in the direction of the motor shaft bearing, which are transferred to the motor shaft bearing via the interposed sleeve. This type of arrangement is not disclosed or suggested by either the Hasebe or Ichioka reference, so that a combination of these references also would not lead to the present invention. It is respectfully submitted that since the prior art does not suggest the desirability of the claimed invention, such art cannot establish a prima facie case of obviousness as clearly set forth in MPEP section 2143.01.

The application in its amended state is believed to be in condition for allowance. However, should the Examiner have any comments or suggestions, or wish to discuss the merits of the application, the undersigned would very much welcome a telephone call in order to expedite placement of the application into condition for allowance.

Respectfully submitted,



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